

NOAA FISHERIES SERVICE

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Monk Seals

Monk Seals Have Low Genetic Diversity

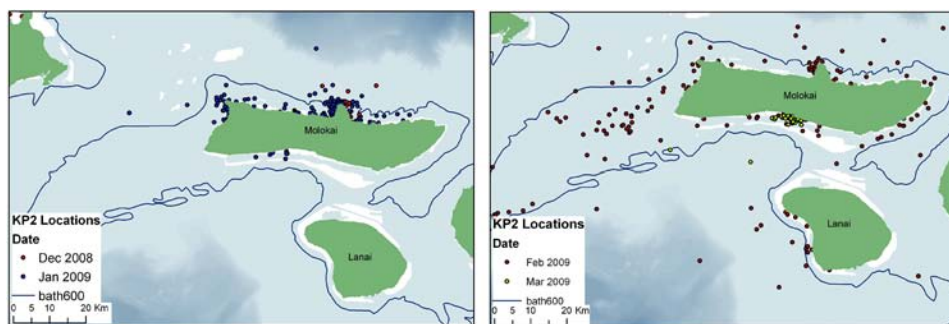
The Hawaiian monk seal has the lowest genetic diversity of any mammal tested to date. Genetic diversity is important to the evolution and persistence of a species because natural selection acts on genetic differences among individuals. Without genetic diversity, a population cannot adapt to environmental changes and or develop an immune response to infectious diseases.

Low genetic diversity does not mean that the Hawaiian monk seal is doomed to extinction. Even with extremely low genetic diversity, it was able to recover from being hunted to near extinction in the 19th century (a minimum of 23 seals in 1890) to over 900 non-pups by 1960. Though the species has shown remarkable resilience, low genetic diversity does have conservation implications. Because variability is so low, it is important to protect all individuals, even males. Also, it is very important to minimize exposure to infectious diseases, carried by humans and our pets. With such low genetic diversity, if one seal is not immune to a disease, it is likely that all Hawaiian monk seals will be susceptible with catastrophic consequences.

Provided by Dr. Jenny Shultz who just received her PhD from this work. She is a monk seal response volunteer when she can within her limited schedule.

KP2 in the Wild

The story of KP2 was featured in MMRN Activity Update 10. Here is a brief update of his progress in the wild.



The above shows satellite tracking of KP2 from December 2008 through March 2009. Note that in the first two months KP2 moved mostly along the north and west shores of Molokai exhibiting normal seal behavior and the ability to thrive in the wild. In February and March he began to explore and even moved to Lanai for a few days. His use of Penguin Banks, an area known to be important to monk seals, was encouraging.

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Hawaiian Monk Seals

After two months of appearing to exhibit wild behavior on the northern shores of Molokai he “found” Kaunakakai Pier and has been seen interacting with people. While this behavior is undesirable, he has been an ambassador for monk seals on the island of Molokai and the local community has gained a new found interest in monk seals. It has also provided an opportunity for the Molokai monk seal volunteers to conduct school programs on the issues surrounding KP2 and other monk seal related information.



R042 Relocated to Nihoa After Many Attempts to Keep Her Wild

Those who have read previous editions of the Pacific Islands Region Marine Mammal Response Network Activity Update know that R042 has provided monk seal managers with a wide array of management challenges from stealing fish, to trying to surf, and even trying to sleep in someone’s tent. After two years of management mitigation, four relocations within the main Hawaiian Islands, and countless media and outreach efforts it was determined that it was in the best interest of public safety and the welfare of the seal that she be relocated to Nihoa. Nihoa is the island at the base of the NWHI chain and is 280 miles (450 km) northwest of Honolulu and 120 miles (190 km) northwest of the island of Niihau.

The United States Coast Guard (USCG) supplied the airlift of R042 from Lanai to her holding pen on Oahu at the Marine Corps base Hawaii, and a week later to Kauai aboard a C-130. USCGC buoy tender *Kukui* transported her from Kauai to the near shore waters of Nihoa.

She was released within 1,100 yards from the shore of Nihoa, and swam in deep water for two weeks where it is likely she rested on sea mounts before hauling out on

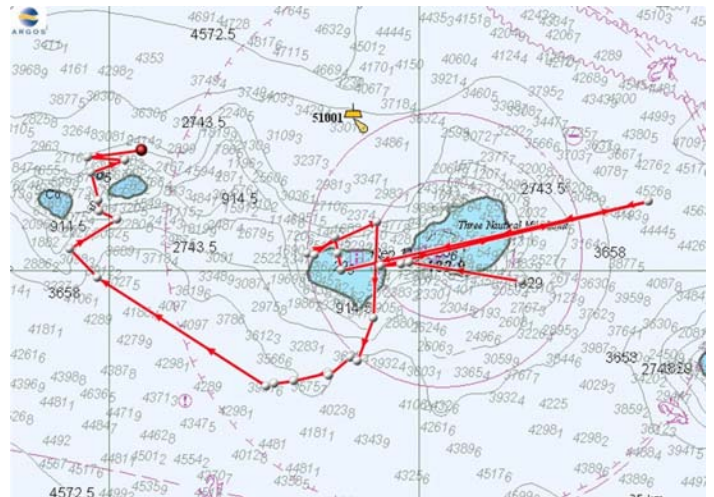




Nihoa. The distance she travelled over the two weeks would have allowed her to swim to Kauai two and a half times. Transmissions from the tag lasted for only a month, but based on her behavior she was presumed to be thriving at the time transmissions ceased.

This is the first time a MHI monk seal has been relocated to the NWHI. While this was likely a successful venture, the action of moving a seal from an environment where it was thriving to a resource poor environment was not the usual management approach, however, it was her only option. RO42's story teaches us that it will take all of us to keep seals wild. It's better and safer for humans, the seals, and for the recovery of the population.

Special thanks go to the United States Coast Guard and Marine Corps Base Hawaii.



Dehookings

(below) The seal known as R040, a two year old male, was caught several days after being reported as being hooked. He was often seen in lava fields close to the water at Kaena Pt. so it was difficult to capture him for the dehooking procedure. For safety reasons it is NOAA Fisheries' protocol not to catch seals while they are on rocks. He finally showed up on one of the nicest beaches on Oahu (Yokohama Beach) where he was safely dehooked four days after the initial report.



(right) RB08, a 2 year old female, born on Kalaupapa, Molokai in April 2007 was sighted at Rabbit Island on February 28, 2009 with a sizable fish hook in her mouth. Dr. Charles Littnan, Pacific Islands Fisheries Science Center (PIFSC) personnel and Dr. Greg Levine (contract veterinarian) successfully removed the hook as shown to the right.



(below) A seal that was sighted one year completely covered in green algae before his molt, was sighted at Makai Research Pier in Waimanalo, on April 22, 2009, with a fish hook in the left side of his mouth. Over the next 11 days, many hours were spent by both volunteer and NOAA Fisheries staff to intervene. The capture and dehooking finally occurred at Kalaeloa Campground May 3, 2009. His muzzle remained swollen for several days after the dehooking.



(above) NOAA Fisheries staff took a zodiac out to Rabbit Island off of Oahu to get to the hooked seal known as RW08/09. He was observed with a hook on March 25, 2009 but staff was not able to dehook him until March 30, 2009.

5th Semi Annual Seal Count

35 Hawaiian monk seals were sighted during the 5th Hawaiian Monk Seal Count held on April 18, 2009. The number counted was on par with the previous four counts. Response team members frequently observe seals at specific locations on the three islands that did not count any seals, however; these seals did not “get the memo” and failed to show themselves in the allotted time frame on seal count day.

	April 28, 2007	October 20, 2007	April 19, 2008	October 18, 2008	April 18, 2009
Kauai	13	6	13	14	16
Oahu	6	5	14	9	7
Molokai	19	7	8	15	11
Maui/Lanai	1	3	0	5	0
Kahoolawe	2	1	2	0	1
Big Island	0	1	1	5	0
Total	41	23	38	48	35

Two Seal Deaths on Kauai

On April 20, 2009 a five-year old subadult male monk seal (RK19) was discovered dead at Kaumakani on the west shore of Kauai. This otherwise healthy seal was observed just one day prior during NOAA Fisheries semi-annual Hawaiian monk seal count. In 2008, this seal was fitted with a crittercam as part of a main Hawaiian Island foraging study conducted by the PIFSC.

On May 21, 2009, a female monk seal (RK06), potentially in her mid-teens, was discovered dead at Pilaa beach on the north shore of Kauai. A necropsy revealed the seal was carrying a near term, male monk seal pup. This female has had five pups in the past and was pregnant with her sixth. This female was an important breeding female and a huge loss for the main Hawaiian Islands monk seal population.

NOAA Fisheries Pacific Islands Regional Office (PIRO) staff performed necropsies on both animals; in both cases cause of death was determined to be as a result of bullet wounds. NOAA Fisheries Office of

Law Enforcement (OLE) is investigating both cases. Anyone with information on these incidents should call OLE’s 24-hour enforcement hotline telephone number 1-800-853-1964.

PIRO and the Hawaii Department of Land and Natural Resources (DLNR) along with community groups, volunteers, and Hawaiian cultural practitioners held a ceremony which was led by Kauai cultural practitioner Kumu Sabra Kauka and included a blessing and distribution of ashes of one of the seals from an outrigger canoe in the Hawaiian tradition. The

ceremony occurred at Poipu beach on June 18, 2009. The ceremony was held to provide some closure for the local community who have been shocked by these events, and to give a well-respected Hawaiian cultural practitioner an opportunity to state publicly that such behavior towards Hawaii’s native animals is not acceptable. Kauka was quoted as stating that the monk seals are the “Kamaaina” of the sea and it is all of our responsibility to protect and recover them.

Animosity toward the Hawaiian monk seal at the local community level is high on





Kauai, Molokai, and parts of the Big Island. As such, PIRO is meeting with community leaders and cultural practitioners on each of these islands in an attempt to dispel misperceptions about the monk seal, including the belief among some that monk seals are non-native animals and should be treated as “invasive species.”



(above) Ashes are distributed during the ceremony held for RK06 and RK19 in June.

Cetaceans

The first stranded animal of the year, KW2009001, was a striped dolphin (*Stenella coeruleoabla*) reported washed ashore on a rocky reef ledge in front of Kahuku golf course, North Shore, Oahu. Hawaii Pacific University’s stranding team responded in the mid-afternoon on January 9, 2009. The animal’s upper jaw was broken and there were obvious signs of injury from the reef. The report was received at 7 am on the day of retrieval; however, no prior knowledge of how long the animal had been ashore on the secluded beach was available. The animal was brought back to Hawaii Pacific University and frozen until March 13, 2009 when it was necropsied by Dr. Kristi West. The animal was too decomposed to get viable tissue samples.



KW2009002, the next stranded animal of 2009, was a Humpback calf (*Megaptera novaeangliae*) which was found on February 9, 2009 floating off of Kauai. It washed ashore at Kekaha Beach Park, east of Kokole Point, and was later towed to Kokole Point. The animal was blessed by Kauai’s cultural practitioner Kumu Sabra Kauka and the necropsy was performed by Dr. Gregg Levine, Dr. Wendy McIlroy, Dr. Kristi West, Dr. Brenda Jensen, Dr. Mimi Olry and Hawaii Pacific University’s marine mammal response team. The entire skeleton of the calf was later flown back to Oahu to be used in future

What Can You Do to Help?



Go to the website of The Marine Mammal Center, a NOAA Monk Seal Recovery Partner:

<http://www.marinemammalcenter.org>

or go to:

<http://www.marinemammalcenter.org/learning/comm/monksealrecovery.asp>

Oahu Volunteer’s website:

<http://www.monkseal.org>

or go to:

<http://www.monksealmania.blogspot.com>

educational teachings. Special assistance from the Kauai County Ocean Safety Life Guard Team and the Pacific Missile Range Facility to retrieve and secure the carcass was extremely helpful. Blunt trauma was suspected but not confirmed.

KW2009003 was believed to be a sperm whale (*Physeter macrocephalus*), but DNA results are needed to confirm that. The carcass washed ashore in Hana, Maui at Muolea on private property. It was severely decomposed with obvious large shark bites and was reported to the NOAA hotline on February 15, 2009 at 10:15 am. Nicole Davis coordinated the response the following morning. Dr. Kristi West, Whitney White and Jenny Leach of HPU flew to Maui from Oahu, along with David Nichols (DLNR) to join the Maui response team - Nicole Davis, Cheryl King, Chris Brotius, Joe Fell-McDonald and Hannah Bernard. The team arrived on site at 1 pm and over several hours, documented the whale, took several tissue samples and collected one vertebrae bone. The whale was measured at 56 ft but was nearly bent in half and missing its flukes. The carcass was hung up on sharp lava rock at the water's edge, limiting safe access to the



whale; the peduncle area was only available at low tide. Due to the treacherous nature of the area, the advanced decomposition of the carcass and the remoteness and relative security of the property the land owners/caretakers, State and Federal workers were all in agreement to let nature take its course with the carcass and did not attempt removal after the sampling was complete. The area of Muolea is very significant in Hawaiian culture, therefore one of the

land owners/contacts, performed a pule privately over the whale before and after the response team worked on it.



On March 13, 2009 KW2009004, a Spinner dolphin calf (*Stenella longirostris*), was reported by a boat in Maile Bay, Oahu. Monk seal volunteers, Robert and Barbara Billands, picked up the dead calf and transported it into town where the Marine Mammal Stranding group picked it up and took it to Hawaii Pacific University where Dr. Kristi West and team performed a necropsy later that day. This was a very young and dependent calf that demonstrated a failure to thrive which is not uncommon in the animal kingdom.



This “unknown female” gave birth on Kalaupapa and was reportedly biting and pinning her new born pup. NOAA Fisheries experts, with assistance from the USCG, flew over to monitor the situation. While the mother was acting aggressively toward the pup, the behavior calmed over time and the decision was made not to intervene. The pup was weaned successfully. The mother may have had some post-partum pain which caused her agitated state.



A Spinner dolphin calf on Kauai was injured and abandoned. Efforts were made to push the dolphin out to deeper water but it likely did not survive.



(left) RB18/19, a two year old male is seen feeding on a small sea turtle on February 27, 2009. Seals are not known to forage on sea turtles.



(right) RB18/19 (R042's half brother) is seen hauled out on a pier on the Big Island. Displacement techniques were used to herd him back into the water and outreach was conducted to educate the public about seals who become friendly.



On January 25, 2009 marine mammal veterinarian Gregg Levine nominated DB and Marilyn Dunlap and Robert and Babara Billands, for the Animal's Best Friend Award. Both couples are dedicated monk seal response volunteers and are pictured here at the Honolulu Veterinary Society reception after winning the award.



A monk seal feeds on (or plays with) a small shark on Molokai.